

1 CLAIMS:

2 1. A thin profile battery bonding method comprising:
3 providing a curable adhesive composition comprising an epoxy
4 terminated silane;
5 providing a thin profile battery and a substrate to which the thin
6 profile battery is to be conductively connected;
7 interposing the curable adhesive composition between the thin
8 profile battery and the substrate; and
9 curing the adhesive into an electrically conductive bond electrically
10 interconnecting the battery and the substrate.

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12 2. The method of claim 1 wherein the epoxy terminated silane
13 comprises a glycidoxy methoxy silane.

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15 3. The method of claim 1 wherein the epoxy terminated silane
16 comprises a glycidoxypropyltrimethoxysilane.

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18 4. The method of claim 1 wherein the epoxy terminated silane
19 is present in the curable adhesive composition at less than or equal to
20 about 2% by weight.

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22 5. The method of claim 1 wherein the epoxy terminated silane
23 is present in the curable adhesive composition at less than or equal to
24 about 1% by weight.

1 14. The method of claim 9 wherein the epoxy terminated silane
2 is present in the curable adhesive composition at less than or equal to
3 about 1% by weight.

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5 15. A thin profile battery bonding method comprising:
6 interposing a curable epoxy composition between a thin profile
7 battery and a substrate to which the thin profile battery is to be
8 conductively connected, at least one of the battery and substrate
9 comprising a metal surface with which the curable epoxy is to
10 electrically connect; and

11 curing the epoxy into an electrically conductive bond electrically
12 interconnecting the battery and the substrate, the epoxy having an
13 effective metal surface wetting concentration of silane to form a cured
14 electrical interconnection having a contact resistance through said metal
15 surface of less than or equal to about 0.3 ohm-cm^2 .

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17 16. The method of claim 15 wherein the epoxy has an effective
18 metal surface wetting concentration of silane to form a cured electrical
19 interconnection having a resistance through said metal surface of less
20 than or equal to about 0.16 ohm-cm^2 .

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1 31A3 31. The apparatus of claim 29 wherein the epoxy terminated
2 silane comprises a glycidoxypropyltrimethoxysilane.

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4 32. The apparatus of claim 29 wherein the epoxy terminated
5 silane is present in the adhesive mass at less than or equal to about
6 2% by weight.

8 33. The apparatus of claim 29 wherein the epoxy terminated
9 silane is present in the adhesive mass at less than or equal to about
10 1% by weight.

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12 34. The apparatus of claim 29 wherein the thin profile battery
13 comprises an outer nickel clad stainless steel surface over which the
14 conductive adhesive mass is received.

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16 35. The apparatus of claim 29 wherein the thin profile battery
17 is a button type battery having a terminal housing member comprising
18 an outer nickel clad stainless steel surface over which the conductive
19 adhesive mass is received.
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45. An electric circuit comprising first and second electric components electrically connected with one another through a conductive adhesive mass comprising an epoxy terminated silane.

46. The electric circuitry of claim 45 wherein the epoxy terminated silane comprises a glycidoxymethoxy silane.

47. The apparatus of claim 45 wherein the epoxy terminated silane comprises a glycidoxypropyltrimethoxysilane.

48. The apparatus of claim 45 wherein the epoxy terminated silane is present in the adhesive mass at less than or equal to about 2% by weight.

49. The apparatus of claim 45 wherein the epoxy terminated silane is present in the adhesive mass at less than or equal to about 1% by weight.

50. The apparatus of claim 45 wherein at least one of the first and second electric components comprises a nickel containing metal surface over which the conductive adhesive mass is received.

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